

September

## In Great Englanding on West Ridings.

The stranger who enters a Yorkshire 'clothing town' will easily discover the art of wool. But most of the inhabitants are engaged upon it. He sees many wagons in the streets heaped high with great packs rich in wool or full of wool. On all sides you see very tall chimneys sending out black clouds of smoke, every chimney belongs to a long building with a flat front & many windows; most likely the building has three sides with a court or yard in the middle. Let him watch early to gain view of these buildings at mid-day, & he will see great crowds of people pouring out, hundred, in some cases, thousands, men & women, boys & girls. They are not like the smartly dressed people who pour out of church & stand on a bunting. The men always wear long blue pin-striped; the women, big white aprons that cover entirely their dresses. Never a bonnet - is to be seen in the crowd; the women have hats & bonnets at home on Sundays as smart as anybody's; but, to-day, they all wear big shawls pinned under the chin hanging below the waist. There are a great many poor women poor men in the noisy throng which are streaming off into all the little streets near the mill. Two or three drop into every cottage here about a hasty dinner, & then back again to work at the mill. For these are the 'mill hands' whose business it is to look after the great machines used in the combing, carding, drawing, rolling, spinning, weaving of wool.

every body knows that wool grows on the sheep's back & that my garments & warm stuffs, coats are made of wool; & Yorkshire children no doubt

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I know that a proper spin wool & weave it into various stuffs is the great business of their country. But how does it happen that wool is used for this purpose? It might easily occur to any savage to shear the fleece as it comes off the sheep's back, to keep him warm, but to spin the short fibres of the wool into long threads, & to weave them into soft stuffs, is quite another matter.

Wool is a sort of hair, yet hair could never be manufactured into close, soft cloth: the difference between wool hair is, that each little fibre grows curled up, not with a large loose curl such as we often see in hair, but with a very tiny curl or wave. Also, each curly fibre has jagged edges, being covered all over with scales, covering small but it is impossible to see them with the naked eye, or to feel them, but yet large enough to catch in one another. The natural curl of the wool fibres causes them to twist they get in to spinning, held by their jagged edges, they hold fast to one another. This, in short is called the ~~ways~~ of broad cloth you cannot see the threads crossing each other, all that is seen is a soft woolly surface, the way to feel that close surface is to see if you cannot the cloth in such a way that every little fibre becomes hooked by its jagged edges to other fibres. Then, think how short each little wool fibre is & when an infinite number of joins are made, to make a short length of yarn: how is it that this yarn is so strong where edges not break at the joints? just because the commuters fibres that form it do not ~~not~~ break at the joints? lock together by means of their little hooks so that they are not quite easily pulled apart.

For think, perhaps, that the wool off the sheep's back is pretty much the same all the world over.

but that is not the case by any means: some are  
as very short, fine, curly, covered with tiny scales;  
other sorts are long, straight & smooth because they  
have only a few of these little scales or hooks;  
and the business of the manufacturer is to find  
out what sorts are best for the cloths he  
makes.

There was a time when "all the world very kept  
warm by English wools" - so says an old writer,  
but now a day's wools are brought from  
many countries to spun & woven in our  
Yorkshire mills. One sort of wool does here  
for blankets, another for broadcloths, another  
for fine merinos, a fourth for alpacas &c  
or ~~so the~~ broad cloths fall over the world,  
to Australia & America, New Zealand,  
<sup>Spain</sup>~~with~~ ports of Germany & Egypt, some into  
the docks of Hull or Liverpool with their cargoes  
of wool sacks; and many a curious tale I  
per may lands might tell of wool sacks &c.  
~~crosswater~~ if they could but speak!  
See merchants send their buyers to the  
sea ports, there these look over the ships' angles  
& feel the wool, test it, <sup>in various ways</sup> apprise it, sift & count  
them well, pay for it to sell to the manufacturers;  
then it is carded off both mills, & we shall  
see presently that becomes fit. In the meantime  
when you see bags of wool as big as half a dozen  
beds being hoisted <sup>by crane</sup> to the top storey of a high  
house, - you had better keep out of the way.

Now wool comes from Australia & from  
any other part of the world excepting England itself.  
Beautiful wool itself is, curly, fine & silky  
fit broads ~~are~~ turned into the very effect  
of cloths. The German wool is even finer than

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Brown cloth of Australia, was imported when  
made into ~~some~~ <sup>HOW THE TRADE WAS BUILT.</sup> soft Spanish  
wool upon a ~~bale~~ <sup>a</sup> Yorkshire manufacturer  
who had not much money to send said his boy  
to Liverpool to buy wool. Now at that time  
there <sup>was</sup> ~~was~~ <sup>old little</sup> ~~any~~ <sup>in</sup> in the yard of a Liverpool merchant  
many bales of "green clothing stuff" which no one  
would buy. People soon learned it was  
left over it was, & the merchant did not  
know what to do with the "ratty stuff" which  
had been sent him from South America.  
By a happy chance, a young Yorkshireman  
turned into this merchant's yard: he pulled  
out a handful from the open corners of bale,  
"felt" at it, smelt at it, did everything but  
taste it, & at last carried away a sample in  
his pocket: very soon he came back to that lucky  
Liverpool merchant, & bought up every bale of the  
unloved stuff.

~~People~~ <sup>by and by</sup> heard of a new material for  
dresses, called alpaca, a shiny, silky wool  
stuff, most pleasant for summer wear; this  
was what Mr. Titus Salt had made of the odd-looking  
dirty wool he had picked up in <sup>that Liverpool</sup> yard. It was the soft, fine, <sup>silky</sup> ~~shiny~~ <sup>from soft, sleek,</sup>  
Alpaca, a beautiful creature whose native home is in  
the lofty mountains of South America.

Mr. Salt (who afterward became Sir Titus Salt), made  
a great fortune by his discovery. He wished his  
work people ~~to get the benefit of his wealth~~  
he made up his mind to move them out of the  
close air of the crowded town to a lonely spot in  
the Aire valley. So here he built a very fine  
factory

factory, & a town & many streets of good houses,  
his work people, with schools, & a chapel & Sunday  
Schools, public baths & wash houses, a park  
& an institute, everything he could think  
of for the comfort & pleasure of his people.  
In 1823 all ready; and, in his pocket,

In 1855, all suddenly; and, on his <sup>49th</sup> birthday Mr Salt led his people out ~~gaily~~  
Bradford to their new homes with colours flying  
bands playing; ~~the men~~ <sup>and</sup> ~~women~~ <sup>were</sup> ~~all~~ <sup>in</sup> ~~white~~ <sup>white</sup> & festive  
returning to mill people took possession of  
the bright little town of Saltire. A bright pink  
little town it is still; even the peat-factory is  
not yet darkened by smoke; the two monster  
engines bright beautiful as a drawing room  
clock, are kept in glass cases for the delight of  
the passers by; that is to say, <sup>when</sup> the shot of each  
engine might soon bring a huge sheet of plate  
glass, <sup>in</sup> ~~in~~ <sup>in</sup> full besides a space or made

enough may  
glass.  
Many kinds of stuff besides alpaca or made  
in this great factory; every kind of wool used  
in the woollen manufacture may be seen in  
the <sup>numerous</sup> warehouses. Here are also old cotton  
bales from India, packed in India on strings,  
next little square ballots of alpaca from Peru;  
workman-like bales from Germany; clumsy  
packages of wool hair, cut from the mohair goat of  
Syria; much <sup>fine</sup> wool from South Africa;  
endless rolls of Batavia wool from Australia,  
wools from Austria, wools from Egypt.

But we must not linger any longer over the  
endless heaps of foreign wools which lie about in haphazard  
ready for the sorters; we have yet to set all that is done to  
the wool before it passes into the hands of the dressmakers, or  
tailors.

Inside a Factory

Opposite

We get into manufacturer who has a large mill to bale good enough to let us go over it. As soon as we mind down a hoist lift to - up to the top story of the mill, where the wool sorting is carried on, because the sorter wants a strong light from the roof so that he may see his wool well. We enter a large, bright airy room where the sorter stands at his light & easy work. He stands at a board, placed breast high before a window, upon which a fleece is spread, & with wonderful quickness of eye & strength, he lets the hairs into sometimes a dozen different qualities, coarse, fine, prime, finest & soon. The wool. sorter gets good wages because it is not everyone who can feel or see any difference between the fibres of one hand full of wool & another.

The next thing to do is simple enough. The wool is thrown into a large trough, filled with hot water, & soap. Here it is worked about with iron rakes until it is quite clean. Then, a "porcupine", rollers set with hooked teeth, draws it out of the water. It is dried by being spread over a wire platform beneath great fans more to & fro making a draught of hot air.

Then, a plucker, set with crooked teeth, pulls out all the knots from the tangled apron full with which it is fed; after two other preparing machines make the broad apron wool into a long roll not bigger than a child's wrist which is called a Sliver.

Next, the Sliver goes into the combing machine, a wavyed machine that can do a dozen different things with

with as much care as a man apply time &  
feel smooth neatness.

Consider how difficult it is to comb a tuft  
of wool, you must remember that it is  
unlike the combing of one's own hair in this -  
that the hair is fastened on the head loosely &  
you may give a good hard tug to the comb  
without bringing it out. Now, the wool is loose  
at both ends; so the combing machine must  
hold fast one end of the tuft, & at the same  
time, comb out the loose ends. Then, the combed  
end must be held, & the tangled end combed off.  
When the tuft is combed at both ends, it  
must be laid <sup>so as to cover up the air tuft</sup> onto the slates of combed wool.  
The comb must be cleaned with a brush & the dust  
& tangled & refuse must be emptied into a  
can, & a new tuft of tangled wool must be  
seized ready for combing. All this action,  
more, or performed, by the hand quick as thought,  
by a single machine; which is worked by the turning  
~~fasten~~, & at least you see a lovely milk-white  
roll of wool pouring out into the can which is  
waiting to receive it.

What is the use of all this combing & brushing -  
from these are little brushes as well as combs  
attached to the machine? Just the same as  
that it is to comb & brush your hair. When it goes  
into the combing machine, the wool is tangled  
& matted, not quite clearly; when it comes out,  
all the little fibres of the wool lie straight & smooth  
side by side, & quite free from dust. Before this wonderful  
beautiful machine was invented all the wool combing was  
done by hand, & a very tedious & very dirty kind of work  
was that of the wool-comber. Now, nothing can be cleaner, neater, &  
quicker than the work of this machine.

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But "combing" is not the only process by which the tiny, curling fibres of wool may be made to lie straight side by side. Carding is thought to answer better than combing for the finest kinds of wool, the fibres of which are very short & curly. We must go into the carding room to see how this is managed. In a huge room, with, perhaps, a hundred great carding machines in it, standing in pairs end to end, with a passage between them.

You think, perhaps, that a card is a card upon which the wool is wound. Nothing of the kind; it is an iron roller, set all over with steel wires, which ~~clings~~ <sup>clings</sup> together from the hairs of a clothes brush. There is a large card, & a number of smaller cards in a carding machine. The wool enters into the greedy maw of the machine, & is drawn through the pricks of one card after another, until, after the last carding, every fibre lies straight & even like the hairs of your head.

The soft-clad wool, that leaves the machine after the carding, is pressed together & rolled & drawn by one machine after another, until it becomes a sort of soft cord, about the thickness of a candle-wick. It is then wound upon <sup>spindles</sup> ~~whisks~~, & is ready for the spinning frame. Fully <sup>dozen</sup> frames does the sliver of wool go through, before it is ready for the spinning frame & as each frame <sup>presses</sup> several second slivers into one, & draws out that one until it is thinner than any of the slivers of which it is formed, the wool is doubled many times while passing through these frames. Indeed, it is said, that about a quarter of a million doubling up

takes place before the wool is spun; and every doubling helps to stretch & arrange the short-fibres, so as to scatter their ends. But it is ~~hardly~~ <sup>not</sup> ~~possible~~ that two ends should <sup>not</sup> fall together. This is very important, because if half a dozen ends come together, there would be a weak place where the yarn would easily break <sup>in</sup> spinning. Now, the carding or combing over, every little curling fibre lies straight & even & is ready ready for use. The next thing is to make a great arrangement of the spindle so that these into a thread or yarn such as you may see in the ravelings of a piece of stuff. The ravelings from a blanket are thick & coarse. Those from a piece of <sup>linen</sup> are very fine; & you see, the yarn must be spun of <sup>linen & coarse</sup> different ~~fibres~~ according to us that is to be made fit.

less than a hundred years ago the plan in the West Riding was for the worsted manufacturer to carry his wool round to the villages scattered in the dale. Some would be taken in ~~at~~ every cottage, & on mother & girls would spin it into threads with a spinning-wheel, in working which, the woman would keep the fibres straight with her hand, while the turning of the wheel would cause them to twist into a single thread. Each woman could spin only one thread at a time.

If you take now many threads cross each other in a piece of plaid, you will see this must have been rather slow work. A poor weaver, called Hargreaves thought so too, invented a machine called a spinning-jenny which could spin eight threads at once, and, later, a Mr. Crompton of Bolton in

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(in Lancashire)  
invented the multi-ferry. a wonderful machine  
which will keep <sup>an immense number of</sup> spindles at  
work.

How these machines do their work is too deep  
a matter for us to explain. The great frames  
stand in pairs all through the length of a very  
large room. The machines drawl the  
spinning, better, perhaps, than if they had  
seen. The work of the women & girls who  
watch them is just to go from spindle to spindle  
to spindle & to join any one of the hundred  
of threads which happens to break, & this they  
do with a wonderfully quick twist. Every  
girl mind's two frames, each frame contains  
about <sup>many</sup> 120 spindles. The work is easy enough.  
The spinners walk from end to end of their  
frames as if they were quite at their ease, but  
they must be on the watch every instant, or a  
wful tangle of broken thread gets into.

The noise in this, as in all the great  
rooms of the mill, is quite deafening, you  
cannot hear a word that is said to you, & you  
<sup>for explanation</sup> wait till you get outside. But no doubt  
the operatives get used to this, & in the best mills,  
the noise is the most-unpleasant thing attending  
the work.

A good deal of the yarn spun in the mills  
is exported, & delightful it is to an orderly  
mind to watch its operation of packing. The yarn  
intended for this purpose is spun upon spindles  
shaped paper cases which are taken off the frames as  
they stand, & packed in large crates, now upon one  
another between ends, as neatly & closely as the cells  
of a honeycomb; & then the whole is pressed together.